



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

JUN 5 2013

REPLY TO THE ATTENTION OF  
WU-16J

**CERTIFIED MAIL 7009 1680 0000 7664 1340**  
**RETURN RECEIPT REQUESTED**

Mr. Dimitrios Papas  
Environmental Geo-Technologies, LLC  
1001 Woodward  
Suite 400  
Detroit, Michigan 48226

**Re: Request for Waste Source Approval and Authorization to Inject into Two Class I Wells, U. S. Environmental Protection Agency Permit Numbers: MI-163-1W-C010 and MI-163-1W-C011.**

Dear Mr. Papas:

The U. S. Environmental Protection Agency has completed its review of the documents submitted by Environmental Geo-Technologies (EGT) on March 1, 2013, requesting waste source approval and authorization to inject into the two Class I wells identified above.

EPA approves EGT's treatment process as the source for three categories of waste, i.e., hazardous, non-hazardous, and oilfield brines, for injection into the two permitted wells identified above. The permits will be modified to reflect approval of these categories of waste for this waste source under a separate cover letter.

At this time EGT is not authorized to inject into the two Class I wells identified above. This determination is based on procedural inconsistencies for the temperature logs and annular pressure tests, inconclusive results from the radioactive tracer surveys (RTS), and the absence of a current EPA inspection of well monitoring equipment and witnessing of the automatic warning and shut-off system under simulated failure conditions.

**Temperature Logs and Annular Pressure Tests for Well #1-12 and #2-12**

The procedures for conducting the temperature logs and annular pressure tests were approved by EPA in a letter to Tom Athans dated November 28, 2012. This letter is attached for your reference. These approved procedures required the temperature logging tool be compared with a calibrated thermometer in ice water and water of ambient temperature. Prior to conducting the temperature logs, calibration of the logging tool was only performed in ice water, the ambient water temperature calibration was not performed. The approved procedures for the annular pressure test required that the calibration of the pressure gauge be certified within the last 12

months. EPA's review of the annular pressure test results identified that the pressure gauge, used for these tests, was calibrated after the tests were conducted. To eliminate any questions regarding the accuracy of the measured values for these tests, the temperature logs and annular pressure tests must be repeated using the EPA approved procedures. Enclosed for your review is EPA's technical review worksheet for the results of the temperature logs for each well.

### **RTS results for Well #1-12**

The procedures for conducting the RTS were approved by EPA in a letter to Tom Athans dated November 28, 2012, referenced above. Although an injection rate of between 20 to 50 gallons per minute (gpm) was approved to run this test, an injection rate of 5 gpm was used during the test on Well #1-12. The results of the test on Well #1-12 show elevated radioactive levels above the long string casing shoe. Since the test was conducted at a very low injection rate, it is not clear if this elevated radiation level is due to complications created by the low injection rate, or if the test results have identified upward movement of fluid outside the cemented casing. To eliminate any questions regarding the integrity of the bottom hole cement the RTS on Well #1-12 must be repeated using the EPA approved procedures. Enclosed for your review is EPA's technical review worksheet for the results of the RTS for Well #1-12.

### **RTS Results for Well #2-12**

During the RTS for Well #2-12 an accidental leak of radioactive material into the well bore occurred (as identified in the test report) prior to conducting the survey. It appears that the contractor did not provide enough time for this leaked material to clear the entire well bore as this leak appears on the results of the RTS. The leaked material was detected in the lower portion of the casing and appeared as part of the data collection during the RTS. The detection of the leaked material obscured the actual test data in the critical location of the casing shoe. The RTS results are inconclusive and must be repeated for Well # 2-12 using the EPA approved procedures. Enclosed for your information is EPA's technical review worksheet for the results of the RTS for Well #2-12.

### **Inspection of Monitoring Equipment and Warning System Shut-off Simulation**

The two permits identified above require that EPA or its authorized representative must inspect all well monitoring equipment and witness a successful test of the automatic warning and shut-off system under a simulated failure condition prior to granting authorization to inject. To demonstrate compliance with these requirements, EGT submitted an inspection report from Sam Williams, EPA's authorized representative, dated March 8, 2010. EGT also submitted an inspection report from Raymond Vugrinovich of the Michigan Department of Environmental Quality (MDEQ) dated April 2, 2012, and a statement, produced and certified by EGT, that Mr. Vugrinovich witnessed the required tests. Due to the passage of time, the March 8, 2010 inspection by Sam Williams is not representative of the current conditions at the EGT facility. In addition, the April 2, 2012 MDEQ inspection report does not identify the observance of all well monitoring equipment, nor does it identify witnessing the automatic warning and shut-off system under a simulated failure condition. Based on this information, EPA has determined that the inspection requirements have not been met. Therefore, inspection information submitted by EGT does not satisfy the permit requirements and EGT must schedule an inspection with EPA.

EPA would like to schedule the inspection to coincide with the mechanical integrity tests and RTS's identified above so that we may observe those activities as well.

In addition to repeating all mechanical integrity tests and RTS's for both wells, EPA requests that you submit the following information for each well prior to conducting the new tests:

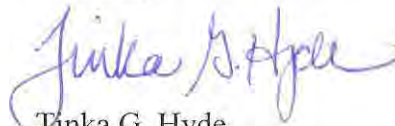
Updated well schematic including these depths:

- Depth to the top of the injection zone.
- Depth to the top of the injection interval.
- Depth to the top of the confining zone.
- Depth to the top of the packer.
- Depth to the bottom of the packer.
- Depth to the bottom of the tail pipe and/or injection tubing.

Please provide the depths as both true vertical depth and relative Kelly Bushing (RKB) for Well #1-12, and RKB for Well #2-12. The depths of the zones defined by geology (the injection zone, injection interval and confining zone) must be consistent with those in EGT's permits and land ban exemption. This information must be submitted to and reviewed by EPA prior to modification of the permits to include the waste source approvals.

If you have any questions regarding this decision, or would like to set the schedule for the tests and the EPA inspection, please contact Allan Batka of my staff at (312) 353-7316 or e-mail at [batka.allan@epa.gov](mailto:batka.allan@epa.gov).

Sincerely,



Tinka G. Hyde  
Director, Water Division

Enclosures

Cc: Raymond Vugrinovich, MDEQ (by e-mail w/ attachments)